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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,758	01/18/2002	Thomas R. Cech	015389-002980US	6144

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EXAMINER	
UNGAR, SUSAN NMN	

ART UNIT	PAPER NUMBER
1642	

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/053,758	CECH ET AL.	
	Examiner	Art Unit	
	Susan Ungar	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *three* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *08 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-17 and 20* is/are pending in the application.

4a) Of the above claim(s) *9-17 and 20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☑ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2/23/04, 1/20/04, 10/08/03, 1/16/03
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The Election filed November 8, 2004 in response to the Office Action of October 20, 2004 is acknowledged and has been entered. Claims 1-17 and 20 are pending in the application and Claims 9-17 and 20 have been withdrawn from further consideration by the examiner under 37 CFR 1.142(b) as being drawn to non-elected inventions. Claims 1-8 are currently under prosecution.

2. Applicant's election without traverse, drawn to the patentably distinct nature of the restricted groups, of Group I, claims 1-8 in the paper submitted November 8, 2004 is acknowledged.

Although acknowledging the patentably distinct nature of the restricted groups, Applicant argues that 37 CFR 1.141(b) bars the Office from imposing a restriction requirement between the pending claims since the claims are drawn to all three categories indicated in 37 CFR 1.141(b), that is a product, a process of making the product and a process for using the product. The argument has been considered but has not been found persuasive. A review of 37 CFR 1.141(b) reveals that 37 CRF 1.141(b) is drawn to lack of unity practice under the Patent Cooperation Treaty. The instant application is not entitled to restriction using the lack of unity practice of the Patent Cooperation Treaty because it is not filed under the Patent Cooperation Treaty and is subject to US prosecution practice.

Applicant further argues that the patentability of all of the claims under 35 USC 102 and 103 can be determined by searching SEQ ID NO:225 and other public information about hTRT and further argues that search of all of the claims will not impose a serious burden on the Examiner. The argument has been considered but has not been found persuasive because the inventions are classified differently, necessitating different searches in the US Patent shoes. Further, classification of subject matter is merely one indication of the burdensome nature

of the search involved. The literature search, particularly relevant in this art, is not coextensive and different searches and issues are involved in the examination of each group. For these reasons the restriction requirement is deemed to be proper and is therefore made FINAL.

It is noted for Applicant's convenience that where applicant elects claims directed to a product and a product claim is subsequently found allowable, withdrawn process claims, that are commensurate in scope with the allowable product claim(s), that depend from or otherwise include all the limitations of the allowable product claim(s) will be rejoined. However, until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. See Guidance on Treatment of Produce and Process Claims in light of In re Ochiai, In re Brouwer and 35 USC 103(b), 1184 O.G. 86 (March 26, 1996 and MPEP 821.04.

In view of the above, as per Applicant's request, should the product claims be found to be allowable, method claims that are commensurate in scope with the allowable product claims will be rejoined and examined.

3. It is noted that examiner has established a priority date of May 6, 1997 for the instant application as it does not appear that either of the parent applications, 08/846,017 or 08/844,419, recite SEQ ID NO:225. If applicant disagrees with any rejection set forth in this office action based on examiner's establishment of a priority date of May 6, 1997 for the instantly claimed application serial number 10/053,758, applicant is invited to submit evidence pointing to the serial number, page and line where support can be found establishing an earlier priority date.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,583,016 in view of Johnstone and Thorpe (Immunochemistry in Practice, 2nd Ed. 1987, Blackwell Scientific Publications, Oxford, p 30).

The claim is drawn to a monoclonal antibody that specifically binds to human hTRT, SEQ ID NO:225.

US Patent No. 5,583,016 specifically teaches that there is a great need for more information about human telomerase (col 1, lines 48-50). The invention provides recombinant telomerase preparations that comprise the protein components of human telomerase (column 3, lines 30-35) and provides pharmaceutical compositions comprising as an active ingredient the protein components of telomerase or a nucleic acid encoding a protein component of telomerase (col 4, lines 24-26) and teaches that the RNA component of telomerase may be used to isolate and purify proteins that bind specifically to the RNA component such as the protein components of human telomerase, wherein gel shift and Northwestern assays are used to isolate the components that bind specifically to the RNA component (col 21, lines 42-29). The specification specifically contemplates using the isolated binding proteins for the immunization of animals for antibody generation to obtain antibodies (col 21, lines 54). In addition, US Patent No. 5, 583,016 specifically claims a method of producing a recombinant

telomerase enzyme (see claims 47-49).

US Patent No. 5,583,016 teaches as set forth above but does not specifically teach monoclonal antibodies/recombinant antibodies to SEQ ID NO:225, does not specifically teach SEQ ID NO:225.

Johnstone and Thorpe teach that technology for production of monoclonal antibodies *in vitro* is available and that such reagents have enormous advantage over polyclonal sera because they are homogeneous, that is every immunoglobulin molecule is identical in antigen binding properties and the cell lines that secrete the antibodies are immortal so that there is an inexhaustible supply of antibodies (p. 30).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to produce a recombinant human telomerase by the method claimed by US Patent No. 5/583,016 and to isolate the protein components of said telomerase as specifically taught by US Patent No: 5,583,016 and to use those isolated components as antigens as specifically contemplated by US Patent No. 5,583,016 in the production of antibodies against each of the isolated protein components. It would be expected that one of those components would be hTRT given that hTRT is a protein component of human telomerase. One would have been motivated to produce a recombinant human telomerase, isolate the protein components and produce antibodies against the protein components because US Patent No. 5, 583,016 specifically teaches that there is a great need for more information about human telomerase. Further, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to produce monoclonal antibodies against the protein components because Johnstone and Thorpe teach that the technology for production of monoclonal

antibodies was available at the time the invention was made. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the methods of Johnstone and Thorpe with the methods of US Patent No. 5, 583,016 to produce monoclonal antibodies that bind to the protein components of US Patent No. 5, 583,016 because Johnstone and Thorpe teach that monoclonal antibodies have an enormous advantage over polyclonal sera because they are homogeneous, that is every immunoglobulin molecule is identical in antigen binding properties and the cell lines that secrete the antibodies are immortal so that there is an inexhaustible supply of antibodies.

Given the claimed production of human telomerase protein in combination with the isolation and antibody production against protein components taught in the specification, at least one of the protein components isolated would be hTRT and thus a subset of the antibodies/monoclonal antibodies produced to the isolated protein components of the combined references would be antibodies/monoclonal antibodies to hTRT and these antibodies would be expected to specifically bind to/cross react with hTRT.

6. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,583,016 in view of Johnstone and Thorpe (Immunochemistry in Practice, 2nd Ed. 1987, Blackwell Scientific Publications, Oxford, p 30) and further in view of US Patent No. 5,001,225.

The claims are drawn to a monoclonal antibody or antigen binding fragment thereof wherein said fragment is Fab or F(ab')2 (claims 1-3).

US Patent No. 5,583,016 in view of Johnstone and Thorpe teach as set forth above, but do not teach Fab and F(ab')2 fragments.

US Patent No. 5,001,225 teaches how to make Fab and F(ab')2 and that Fab

and F(ab')2 fragments lack the Fc fragment of an antibody and have less nonspecific binding than intact antibody (col 9, lines 22-25) and further teach that Fab, F(ab')2 fragments may be used as well as the intact antibody in assay methods (col 9, lines 26-32).

It would have been *prima facie* obvious for one of ordinary skill in the art to produce Fab, F(ab)2 from the monoclonal antibodies of the combined references because US Patent No. 5,001,225 specifically teaches conventional methods of making Fab and F(ab')2 and teach and teach that Fab, F(ab')2 fragments may be used as well as the intact antibody in methods of detection. One would have been motivated to Fab, F(ab)2 from the monoclonal antibodies of the combined references because US Patent No. 5,001,225 specifically teaches that Fab and F(ab')2 fragments lack the Fc fragment of an antibody and have less nonspecific binding than intact antibody.

7. Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,583,016 in view of Johnstone and Thorpe (Immunochemistry in Practice, 2nd Ed. 1987, Blackwell Scientific Publications, Oxford, p 30) and further in view of US Patent No. 5,001,225 or US Patent No. 4,816,567 and Huston et al., (PNAS, 85:5879-5883, 1988.

The claims are drawn to a recombinant antibody or antigen binding fragment thereof wherein said antibody is a Fab (claims 1-3), is an scFv (claims 5).

US Patent No. 5,583,016 in view of Johnstone and Thorpe teach as set forth above, but do not teach Fab or scFv.

US Patent No. 5,001,225 teaches that Fab fragments lack the Fc fragment of an antibody and have less nonspecific binding than intact antibody (col 9, lines 22-25) and further teach that Fab fragments may be used as well as the intact antibody

in assay methods (col 9, lines 26-32).

US Patent No. 4,816,567 teaches recombinant techniques to produce immunoglobulins which are analogous to or altered from those normally found in vertebrate systems which take advantage of gene modification techniques to construct modified forms (col 1, lines 6-14) which include "Fab proteins" which include only the "Fab" region of an immunoglobulin molecule (col 5 lines 23-27).

Huston teaches methods of making an Fv binding fragment which is the smallest antibody fragment that contains a complete binding site and the construction of an Fv analogue, an sFv which is a single chain polypeptide (p. 5879, para 1 and 2). The sFv was shown to closely mimic the antigen binding affinity and specificity of the parent antibody (p. 5882, see Discussion). The immunopharmacology of sFvs could prove particularly interesting as their small size may accelerate the pharmacokinetics when compared to the parent antibody (p. 5883, last para).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to produce recombinant Fab of the monoclonal antibodies of the combined references because US Patent No: 4,816,567 specifically teaches recombinant techniques to produce immunoglobulins which are analogous to or altered from those normally found in vertebrate systems which take advantage of gene modification techniques to construct modified forms. One would have been motivated to produce Fab from the monoclonal antibodies of the combined references because US Patent No. 5,001,225 specifically teaches that Fab and F(ab')2 fragments lack the Fc fragment of an antibody and have less nonspecific binding than intact antibody.

Further, it would have been *prima facie* obvious for one of ordinary skill in

the art to produce recombinant scFv of the monoclonal antibody of the combined references because Huston et al specifically teach that sFv was shown to closely mimic the antigen binding affinity and specificity of the parent antibody. One would have been motivated to produce recombinant scFv because Huston et al specifically suggest that scFv may accelerate pharmacokinetics when compared to whole antibodies.

8. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,583,016 in view of Johnstone and Thorpe (Immunochemistry in Practice, 2nd Ed. 1987, Blackwell Scientific Publications, Oxford, p 30 and pages 49-50).

The claims are drawn to a composition comprising monoclonal antibody to hTRT (claim 1) and a pharmaceutically acceptable carrier (claim 6).

US Patent No. 5,583,016 in view of Johnstone and Thorpe teach as set forth above, but do not teach a composition comprising the monoclonal antibody of the combined references.

Johnstone and Thorpe further teach that it was common practice in the art at the time of applicant's invention to formulate compositions of antibodies and PBS, which is considered to be a pharmaceutically acceptable carrier for storage of antibodies, p. 49 and 50.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to combine the antibody of the combined references with PBS, a pharmaceutical carrier because Johnstone and Thorpe teach that it was common practice in the art at the time of applicant's invention to formulate compositions of antibodies and PBS, which is considered to be a pharmaceutically acceptable carrier for storage of antibodies. One of ordinary skill

would have been motivated to do so in order to develop compositions suitable for storage.

7. Claims 1 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,583,016 in view of Johnstone and Thorpe (Immunochemistry in Practice, 2nd Ed. 1987, Blackwell Scientific Publications, Oxford, p 30) and US Patent No: 5,001,225.

The claims are drawn to antibody of claim 1, having a reporter molecule or label that is covalently or noncovalently bound wherein the reporter molecule or label is selected from enzymes, fluorescent compounds, chemiluminescent compounds (claims 7-8)

US Patent No. 5,583,016 in view of Johnstone and Thorpe teach as set forth above, but do not teach the antibody of claim 1 having a reporter molecule or label that is covalently or noncovalently bound wherein the reporter molecule or label is selected from enzymes, fluorescent compounds, chemiluminescent compounds.

US Patent No: 5,001,225 further specifically teaches that there are many different labels and methods of labeling antibodies that are known to those of ordinary skill in the art. Examples of the types of labels include, but are not limited to, enzymes, fluorescent compounds, chemiluminescent compounds. The patent further teaches that those of ordinary skill in the art will know of other suitable labels for binding to the monoclonal antibody, or will be able to ascertain the same by the use of routine experimentation. Furthermore, the binding of these labels to the monoclonal antibody can be accomplished using standard techniques commonly known to those of ordinary skill in the art.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have bound conventional labels to the

monoclonal antibody of the combined references because US Patent No. 5,001,225 specifically teaches that the binding of these labels which specifically include but are not limited to enzymes, fluorescent compounds, chemiluminescent compounds to monoclonal antibodies is conventional using standard techniques commonly known to those of ordinary skill in the art. One would have been motivated to bind conventional labels to the monoclonal antibodies of the combined references because US Patent No. 5,583,016 specifically teaches that there is a great need for more information about human telomerase and labeled monoclonal antibodies are useful for assays to characterize novel proteins. Given the above, one would have a reasonable expectation of success in binding reporter molecules or labels to the antibody of the combined references.

8. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,583,016 in view of Johnstone and Thorpe (Immunochemistry in Practice, 2nd Ed. 1987, Blackwell Scientific Publications, Oxford, p 30) and further in view of WO 82/01461.

The claims are drawn to a human monoclonal antibody which binds to hTRT protein, SEQ ID NO:225.

US Patent No. 5,583,016 in view of Johnstone and Thorpe teach as set forth above, but do not teach antibody wherein said antibody is a human antibody.

WO 82/01461 teaches that human monoclonal antibodies are useful for immunoassays (p. 2, line 36) and specifically teaches that hybridomas producing said monoclonal antibodies may be produced *in vitro* in the absence of *in vivo* immunization (p. 4, lines 34-40) and specifically teaches that subject human monoclonal antibodies find use in conventional applications for antibodies such as immunoassay, electrophoretic analysis, histology (p. 7, lines 22-28).

It would have been *prima facie* obvious to one of ordinary skill in the art to have produced human monoclonal antibodies of the antibody of the combined references because WO82/01461 specifically teaches that human monoclonal antibodies are easy to produce in that hybridomas for the antibodies may be produced *in vitro*, eliminating an *in vivo* step and because human monoclonal antibodies can be used for conventional applications of all antibodies such as immunoassay, electrophoretic analysis, histology. One would have been motivated to make human monoclonal antibodies of the combined references because US Patent No. 5,583,016 specifically teaches that there is a great need for more information about human telomerase and monoclonal antibodies that are useful in characterization assays such as immunoassay, electrophoretic analysis and histology would provide more information about human telomerase. One would have a reasonable expectation of success in producing human monoclonal antibodies given that the methods of making said human monoclonal antibodies were conventional in the art at the time the invention was made.

Double Patenting

9. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

Claims 1 and 2 of this application conflict with claim 50 of Application No. 09/721,477. The claims conflict because claims 1 and 2 of the instant application

are drawn to a monoclonal or recombinant anitbody or antigen binding fragment thereof that specifically binds to human TRT, SEQ ID NO:225. Claim 50 of Application No. 09/721,477 is drawn to an isolated, monoclonal or recombinant antibody or fragment thereof that binds to human TRT, SEQ ID NO.2. An interference search of the pending patent sequence files reveals that SEQ ID NO:2 of Application No. 09/721,477 shares 100% identity with SEQ ID NO:225 of the instant application. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. The Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

It is noted that a statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1-8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 50, 71, 73 of copending Application No.09.721,477. Although the conflicting claims are not identical, they are not patentably distinct from each other because they relate to the same inventive concept. The instant claims, 3-8 are species of the generic claims of Application No. 09/721,477 and are obvious over the generic claims for the reasons set forth above in the rejection of claims 3-8 under 35 USC 103.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

12. No claims allowed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Ungar, PhD whose telephone number is (571) 272-0837. The examiner can normally be reached on Monday through Friday from 7:30am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Siew, can be reached at 571-272-0787 The fax phone number for this Art Unit is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Effective, February 7, 1998, the Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1642.

Susan Ungar
Primary Patent Examiner
January 17, 2005